FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: VIASAT-KA 89W		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis: N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 15 Years	j. Number of transponders offered on a common carrier basis: 0
c. Construction Completion Date:		g. Total Number of Transponders: 37	k. Total Common Carrier Transponder Bandwidth: 0 MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 51000 MHz	l. Orbit Type: Mark all boxes that apply: [X] GSO [ ] NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (_Hz)		Upper Frequency (_Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
28100	M	29100	M	R	Fixed Satellite Service
29500	M	30000	M	R	Fixed Satellite Service
18300	M	19300	M	T	Fixed Satellite Service
19700	M	20200	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 88.9 W	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The 88.9 W.L. location has been selected in order to avoid physical collision with an operational satellite at the 89 W.L. orbital location.
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.05 Degrees e. Toward East: 0.05 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4b. Total Number of Orbital Planes in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the intital phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

NO NGSO DATA FILED

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S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
SA1	S		-1 dB contour of the uplink Type A beams (beams G1U through G11U)
SA2	S		-1 dB contour of the downlink Type A beams (beams G1D through G11D)
SA3	S		-5 dB contour of the uplink Type B beams (beams U1U through U36U)
SA4	S		-5 dB contour of the downlink Type B beams (beams U1D through U36D)
SA5	S		-1 dB contour of beams TCR, TCL, TMR, TML, BNR and BNL
SA6	S		-3 dB contour of beam BCNR
SA7	S		Visible Earth (Omni beams)

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S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross-Polar Isolation (dB)	(h) Polarization Switchable? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
G1U	R	52.5	51.5	0.05	0.05	26	N		SA1				1349	21.2	-100	20	1
G1UL	R	52.5	51.5	0.05	0.05	26	N		SA1				1349	21.2	-100	20	1
G2U	R	52.6	51.6	0.05	0.05	26	N		SA1				1349	21.3	-100	20	1
G2UL	R	52.6	51.6	0.05	0.05	26	N		SA1				1349	21.3	-100	20	1
G3U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G3UL	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G4U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G4UL	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G5U	R	52.8	51.8	0.05	0.05	26	N		SA1				1349	21.5	-100	20	1
G5UL	R	52.8	51.8	0.05	0.05	26	N		SA1				1349	21.5	-100	20	1
G6U	R	52.8	51.8	0.05	0.05	26	N		SA1				1349	21.5	-100	20	1
G6UL	R	52.8	51.8	0.05	0.05	26	N		SA1				1349	21.5	-100	20	1
G7U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G7UL	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G8U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G8UL	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G9U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G1D	T	52.5	51.5	0.05	0.05	30	N		SA2	4.5	9.3	62.2					
G1DL	T	52.5	51.5	0.05	0.05	30	N		SA2	4.5	9.3	62.2					
G2D	T	52.6	51.6	0.05	0.05	30	N		SA2	4.5	9.3	62.3					
G2DL	T	52.6	51.6	0.05	0.05	30	N		SA2	4.5	9.3	62.3					
G3D	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4					
G3DL	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4					
G4D	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4					
G4DL	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4					
G5D	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	9.3	62.5					
G5DL	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	9.3	62.5					
G6D	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	9.3	62.5					
G6DL	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	9.3	62.5					

G7D	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4						
G7DL	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4						
G8D	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4						
G8DL	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4						
G9D	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4						
G9DL	T	52.7	51.7	0.05	0.05	30	N		SA2	4.5	9.3	62.4						
U1U	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U2UL	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U3U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U4UL	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U5U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U6U	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U7UL	R	52.5	47.5	0.05	0.05	26	N		SA3				1230	21.6	-100	20	1	
U8U	R	52.4	47.4	0.05	0.05	26	N		SA3				1230	21.5	-100	20	1	
U9UL	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U10U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U11U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U12U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U13U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U14U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U15U	R	52.5	47.5	0.05	0.05	26	N		SA3				1230	21.6	-100	20	1	
U16U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U17U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U18U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U19U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U20U	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U21U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U22U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U23U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U24U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U25U	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U26U	R	52.5	47.5	0.05	0.05	26	N		SA3				1230	21.6	-100	20	1	
U27U	R	52.5	47.5	0.05	0.05	26	N		SA3				1230	21.6	-100	20	1	
U28U	R	52.5	47.5	0.05	0.05	26	N		SA3				1230	21.6	-100	20	1	
U29U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U30U	R	52.8	47.8	0.05	0.05	26	N		SA3				1230	21.9	-100	20	1	
U31U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1	
U32U	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1	
U33U	R	52.5	47.5	0.05	0.05	26	N		SA3				1230	21.6	-100	20	1	

U34U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1
U35U	R	52.6	47.6	0.05	0.05	26	N		SA3				1230	21.7	-100	20	1
U36U	R	52.7	47.7	0.05	0.05	26	N		SA3				1230	21.8	-100	20	1
U1DL	T	52.6	47.2	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U2D	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U3DL	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U4D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U5DL	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U6DL	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U7D	T	52.5	47.5	0.05	0.05	30	N		SA4	4.5	24.6	66.4					
U8DL	T	52.4	47.4	0.05	0.05	30	N		SA4	4.5	24.6	66.3					
U9D	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U10D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U11D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U12D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U13D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U14D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U15D	T	52.5	47.5	0.05	0.05	30	N		SA4	4.5	24.6	66.4					
U16D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U17D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U18D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U19D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U20D	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U21D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U22D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U23D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U24D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U25D	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U26D	T	52.5	47.5	0.05	0.05	30	N		SA4	4.5	24.6	66.4					
U27D	T	52.5	47.5	0.05	0.05	30	N		SA4	4.5	24.6	66.4					
U28D	T	52.5	47.5	0.05	0.05	30	N		SA4	4.5	24.6	66.4					
U29D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U30D	T	52.8	47.8	0.05	0.05	30	N		SA4	4.5	24.6	66.7					
U31D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U32D	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U33D	T	52.5	47.5	0.05	0.05	30	N		SA4	4.5	24.6	66.4					
U34D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					
U35D	T	52.6	47.6	0.05	0.05	30	N		SA4	4.5	24.6	66.5					
U36D	T	52.7	47.7	0.05	0.05	30	N		SA4	4.5	24.6	66.6					

G10U	R	52.8	51.8	0.05	0.05	30	N		SA1				1349	21.5	-100	20	1
G10U	R	52.8	51.8	0.05	0.05	30	N		SA1				1349	21.5	-100	20	1
G11U	R	52.8	51.8	0.05	0.05	30	N		SA1				1349	21.5	-100	20	1
G11U	R	52.8	51.8	0.05	0.05	30	N		SA1				1349	21.5	-100	20	1
G10D	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	24.6	66.7					
G10D	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	24.6	66.7					
G11D	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	24.6	66.7					
G11D	T	52.8	51.8	0.05	0.05	30	N		SA2	4.5	24.6	66.7					
G9UL	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
TCR	R	52.7	51.7	0.05	0.05	26	N		SA5					-0.7			
TCL	R	52.7	51.7	0.05	0.05	26	N		SA5					-0.7			
TMR	T	52.7	51.7	0.05	0.05	30	N		SA5	7.5	0.01	25					
TML	T	52.7	51.7	0.05	0.05	30	N		SA5	7.5	0.01	25					
OMN	R	3	-1	0.05	0.05	30	N		SA7				2455	-30.9			
OMN	R	3	-1	0.05	0.05	30	N		SA7				2455	-30.9			
OMN	T	3	-1	0.05	0.05	30	N		SA7	5.5	7.1	14					
OMN	T	3	-1	0.05	0.05	30	N		SA7	5.5	7.1	14					
BNR	R	52.7	51.7	0.05	0.05	26	N		SA5					-3.5			
BNL	R	52.7	51.7	0.05	0.05	26	N		SA5					-3.5			
BCN	T	24.4	21.4	0.05	0.05	30	N		SA6	2.4	0.91	24					

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S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz) At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
G1U	R	C	-88.9							
G1UL	R	C	-88.9							
G2U	R	C	-88.9							
G2UL	R	C	-88.9							
G3U	R	C	-88.9							
G3UL	R	C	-88.9							
G4U	R	C	-88.9							
G4UL	R	C	-88.9							
G5U	R	C	-88.9							
G5UL	R	C	-88.9							
G6U	R	C	-88.9							
G6UL	R	C	-88.9							
G7U	R	C	-88.9							
G7UL	R	C	-88.9							
G8U	R	C	-88.9							
G8UL	R	C	-88.9							
G9U	R	C	-88.9							
G9UL	R	C	-88.9							
G10U	R	C	-88.9							
G10U	R	C	-88.9							
G11U	R	C	-88.9							
G11U	R	C	-88.9							
G1D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G1DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G2D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G2DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G3DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G3D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5

G4D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G4DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G5D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G5DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G6D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G6DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G7D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G7DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G8D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G8DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G9D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G9DL	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G10D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G10D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G11D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
G11D	T	C	-88.9			-129.5	-129.5	-129.5	-129.5	-129.5
U1U	R	C	-88.9							
U2UL	R	C	-88.9							
U3U	R	C	-88.9							
U4UL	R	C	-88.9							
U5U	R	C	-88.9							
U6U	R	C	-88.9							
U7UL	R	C	-88.9							
U8U	R	C	-88.9							
U9UL	R	C	-88.9							
U10U	R	C	-88.9							
U11U	R	C	-88.9							
U12U	R	C	-88.9							
U13U	R	C	-88.9							
U14U	R	C	-88.9							
U15U	R	C	-88.9							
U16U	R	C	-88.9							
U17U	R	C	-88.9							
U18U	R	C	-88.9							
U19U	R	C	-88.9							
U20U	R	C	-88.9							
U21U	R	C	-88.9							
U22U	R	C	-88.9							
U23U	R	C	-88.9							

U24U	R	C	-88.9							
U25U	R	C	-88.9							
U26U	R	C	-88.9							
U27U	R	C	-88.9							
U28U	R	C	-88.9							
U29U	R	C	-88.9							
U30U	R	C	-88.9							
U31U	R	C	-88.9							
U32U	R	C	-88.9							
U33U	R	C	-88.9							
U34U	R	C	-88.9							
U35U	R	C	-88.9							
U36U	R	C	-88.9							
U1DL	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U2D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U3DL	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U4D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U5DL	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U6DL	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U7D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U8DL	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U9D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U10D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U11D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U12D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U13D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U14D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U15D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U16D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U17D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U18D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U19D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U20D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U21D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U22D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U23D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U24D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U25D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U26D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3

U27D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U28D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U29D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U30D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U31D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U32D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U33D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U34D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U35D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
U36D	T	C	-88.9			-122.3	-122.3	-122.3	-122.3	-122.3
TCR	R	C	-88.9							
TCL	R	C	-88.9							
TMR	T	C	-88.9			-137.1	-137.1	-137.1	-137.1	-137.1
TML	T	C	-88.9			-137.1	-137.1	-137.1	-137.1	-137.1
BNR	R	C	-88.9							
BNL	R	C	-88.9							
BCN	T	C	-88.9			-144.1	-143.9	-143.5	-143.1	-141.6
OMN	R	C	-88.9							
OMN	R	C	-88.9							
OMN	T	C	-88.9			-148.1	-148.1	-148.1	-148.1	-148.1
OMN	T	C	-88.9			-148.1	-148.1	-148.1	-148.1	-148.1

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S9. SPACE STATION CHANNELS For each frequency channel provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
UL01	500000	R	29750	R	C
UL02	500000	R	29750	L	C
UL03	1000000	R	28600	R	C
UL04	1000000	R	28600	L	C
DL01	500000	T	19950	L	C
DL02	500000	T	19950	R	C
DL03	1000000	T	18800	L	C
DL04	1000000	T	18800	R	C
CMD1	1000	R	29500.5	R	T
CMD2	1000	R	29500.5	L	T
CMD3	1000	R	29503	R	T
CMD4	1000	R	29503	L	T
TLM1	1000	T	19701	L	T
TLM2	1000	T	19703	R	T
BCN1	1	R	29999	R	T
BCN2	1	R	29999	L	T
BCN3	1	T	20199	R	T

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
FL01	112	UL01	G1UR	DL01	U15DL
FL02	112	UL02	G1UL	DL02	U10DR
FL03	112	UL03	G1UR	DL03	U1DL
FL04	112	UL04	G1UL	DL04	U9DR
FL05	112	UL01	G2UR	DL01	U22DL
FL06	112	UL02	G2UL	DL02	U17DR
FL07	112	UL03	G2UR	DL03	U11DL
FL08	112	UL04	G2UL	DL04	U2DR
FL09	112	UL01	G10UR	DL01	U3DL
FL10	112	UL02	G10UL	DL02	U4DR
FL11	112	UL03	G10UR	DL03	U6DL
FL12	112	UL04	G10UL	DL04	U7DR
FL13	112	UL01	G4UR	DL01	U16DL
FL14	112	UL02	G4UL	DL02	U34DR
FL15	112	UL03	G4UR	DL03	U14DL
FL16	112	UL04	G4UL	DL04	U21DR
FL17	112	UL01	G5UR	DL01	U31DL
FL18	112	UL02	G5UL	DL02	U23DR
FL19	112	UL03	G5UR	DL03	U18DL
FL20	112	UL04	G5UL	DL04	U12DR
FL21	112	UL01	G6UR	DL01	U5DL
FL22	112	UL02	G6UL	DL02	U32DR
FL23	112	UL03	G6UR	DL03	U24DL
FL24	112	UL04	G6UL	DL04	U19DR
FL25	112	UL01	G7UR	DL01	U35DL
FL26	112	UL02	G7UL	DL02	U36DR
FL27	112	UL03	G7UR	DL03	U30DL
FL28	112	UL04	G7UL	DL04	U29DR
FL29	112	UL01	G8UR	DL01	U20DL
FL30	112	UL02	G8UL	DL02	U13DR

FL31	112	UL03	G8UR	DL03	U33DL
FL32	112	UL04	G8UL	DL04	U25DR
FL33	112	UL01	G9UR	DL01	U8DL
FL34	112	UL02	G9UL	DL02	U26DR
FL35	112	UL03	G9UR	DL03	U28DL
FL36	112	UL04	G9UL	DL04	U27DR
RL01	108	UL01	U15UR	DL01	G1DL
RL02	108	UL02	U10UL	DL02	G1DR
RL03	108	UL03	U1UR	DL03	G1DL
RL04	108	UL04	U9UL	DL04	G1DR
RL05	108	UL01	U22UR	DL01	G2DL
RL06	108	UL02	U17UL	DL02	G2DR
RL07	108	UL03	U11UR	DL03	G2DL
RL08	108	UL04	U2UL	DL04	G2DR
RL09	108	UL01	U3UR	DL01	G10DL
RL10	108	UL02	U4UL	DL02	G10DR
RL11	108	UL03	U6UR	DL03	G10DL
RL12	108	UL04	U7UL	DL04	G10DR
RL13	108	UL01	U16UR	DL01	G4DL
RL14	108	UL02	U34UL	DL02	G4DR
RL15	108	UL03	U14UR	DL03	G4DL
RL16	108	UL04	U21UL	DL04	G4DR
RL17	108	UL01	U31UR	DL01	G5DL
RL18	108	UL02	U23UL	DL02	G5DR
RL19	108	UL03	U18UR	DL03	G5DL
RL20	108	UL04	U12UL	DL04	G5DR
RL21	108	UL01	U5UR	DL01	G6DL
RL22	108	UL02	U32UL	DL02	G6DR
RL23	108	UL03	U24UR	DL03	G6DL
RL24	108	UL04	U19UL	DL04	G6DR
RL25	108	UL01	U35UR	DL01	G7DL
RL26	108	UL02	U36UL	DL02	G7DR
RL27	108	UL03	U30UR	DL03	G7DL
RL28	108	UL04	U29UL	DL04	G7DR
RL29	108	UL01	U20UR	DL01	G8DL
RL30	108	UL02	U13UL	DL02	G8DR
RL31	108	UL03	U33UR	DL03	G8DL
RL32	108	UL04	U25UL	DL04	G8DR
RL33	108	UL01	U8UR	DL01	G9DL

RL34	108	UL02	U26UL	DL02	G9DR
RL35	108	UL03	U28UR	DL03	G9DL
RL36	108	UL04	U27UL	DL04	G9DR
GW01	112	UL01	G10UR	DL01	G11DL
GW02	112	UL02	G10UL	DL02	G11DR
GW03	112	UL03	G10UR	DL03	G11DL
GW04	112	UL04	G10UL	DL04	G11DR
GW05	112	UL01	G11UR	DL01	G10DL
GW06	112	UL02	G11UL	DL02	G10DR
GW07	112	UL03	G11UR	DL03	G10DL
GW08	112	UL04	G11UL	DL04	G10DR
TC1		CMD1	TCR		
TC2		CMD2	TCL		
TC3		CMD3	TCR		
TC4		CMD4	TCL		
TM1				TLM1	TMR
TM2				TLM2	TML
TC5		CMD1	OMNUR		
TC6		CMD2	OMNUL		
TC7		CMD3	OMNUR		
TC8		CMD4	OMNUL		
TM3				TLM1	OMNDR
TM4				TLM2	OMNDL
BN1		BCN1	BNR		
BN2		BCN2	BNL		
BN3				BCN3	BCNR

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S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e)Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
D1	500MG7D	500000	16	1107000	0.6642		10.3	20.3
D2	500MG7D	500000	8	746300	0.597		3.6	13.6
D3	500MG7D	500000	4	205900	0.247		-2.8	7.2
D4	6M25G7D	6250	8	8750	0.5833		6.2	16.2
D5	3M13G7D	3125	4	3750	0.75		4.9	14.9
D6	1M57G7D	1562.5	4	937.5	0.375		-0.1	9.9
D7	782KG7D	781.25	2	312.5	0.5		-1.3	8.7
D8	25M0G7D	25000	8	50000	0.8333		10.8	20.8

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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise-Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
A1	1M00F2D	1000		1									10	22.2
A2	1M00G2D	1000		1									9	21.2
A3	1K00N0N	1		1									14	26.2
A4	1K00N0N	1		1									10	22.2

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S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g)Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)					(i)Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
									(j) Min.	(k) Max.	(l) Min.	(m) Max.		
FL01	FL36	D1		1		LB1.doc		64.9	8.8	10.1	61.3	66.7	-122.3	26
FL01	FL36	D2		1		LB2.doc		64.9	8.8	10.1	61.3	66.7	-122.3	17.6
FL01	FL36	D3		1		LB3.doc		64.9	8.8	10.1	61.3	66.7	-122.3	17.6
RL01	RL36	D4		80	6250	LB4.doc		44.4	4.5	4.5	39.2	40.5	-129.5	38
RL01	RL36	D5		160	3125	LB5.doc		44.4	4.5	4.5	36.2	37.5	-129.5	38
RL01	RL36	D6		320	1562.5	LB6.doc		44.4	4.5	4.5	33.1	34.4	-129.5	38
RL01	RL36	D7		640	781.25	LB7.doc		44.4	2.3	2.3	30.1	31.4	-129.5	38
RL01	RL36	D8		20	25000	LB8.doc		64.5	8.7	9.7	45.2	46.2	-129.5	36.8
GW01	GW08	D1		1		LB9.doc		64.9	9.1	10.1	65.7	66.7	-122.3	38
TC1	TC4		A1	1		TC OS.doc		64.9	-7.9	-6.9				
TM1	TM2		A2	1		TM OS.doc					24	25	-137.1	37.4
TC5	TC8		A1	1		TC TO.doc		70	18	22				
TM3	TM4		A2	1		TM TO.doc					10	14	-148.1	37.4
BN1	BN2		A3	1		BCN AT.doc		65	-11.5	-10.5				
BN3	BN3		A4	1		BCN UPC.doc					21	24	-138.1	37.4

S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 3168	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 3050		
S15c. Mass of spacecraft and fuel at launch (kg): 6218	S15f. Length (m): 9.35	S15i. Payload: 0.71
S15d. Mass of fuel, in orbit, at beginning of life (kg): 350	S15g. Width (m): 26.05	S15j. Bus: 0.77
S15e. Deployed Area of Solar Array (square meters): 74.2	S15h. Height (m): 8.4	S15k. Total: 0.55

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a): 10292	(f): 10292	(k): 10292	(p): 10292
Bus (Watts):	(b): 2988	(g): 1320	(l): 2988	(q): 1320
Total (Watts):	(c): 13280	(h): 11612	(m) 13280	(r): 11612
Solar Array (Watts):	(d): 14375	(i): 13000	(n): 13666	(s): 12855
Depth of Battery Discharge (%):	(e) 74.5 %	(j) %	(o) 74.5 %	(t) %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	X	**YES**		**NO**		**N/A**
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?		**YES**		**NO**	X	**N/A**
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	X	**YES**		**NO**		**N/A**

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.